~~Confidential~~   *11 FEB* 1986

Memorandum for the Record

Subject: Meeting to Discuss Use of SAFE Software by FBIS

  On 10 February a meeting was held in the ExDir's Office to discuss whether or not FBIS should use SAFE software to develop the Headquarters Classified Segment of the FBIS upgrade. It was concluded that FBIS would continue on the previously selected route with LEC.

  The meeting was attended by the Comptroller; Deputy, Comptroller; DDS&T; ADDS&T; DDA; Director, OIT; Chief, OIT/IISG and Director, FBIS.

  After all was said and done, it was the feeling of a majority of the group that it was too late in the process of the FBIS upgrade to use the SAFE software, which would require the use of IBM equipment as well. Further, at this stage little significant fiscal savings could be demonstrated, although it was recognized that the SAFE software would meet many (more than 80%) of the FBIS requirements. In this regard, it appeared that to uncouple the Classified Segment of the FBIS upgrade inorder to make use of the SAFE software would result in complications and expenses which would make savings unlikely.

  Fear was expressed that several years hence there would be problems with the interface between FBIS and SAFE. Both FBIS and OIT took the position that there was no serious concern in this regard with respect to FBIS product being deliverd to SAFE. However, if _____ SAFE users want to manipulate FBIS raw material this probably won't be possible.

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William F. Donnelly

~~Confidential~~

3 February 1986

MEMORANDUM FOR: William F. Donnelly

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FROM:

SUBJECT: FBIS Use of SAFE Point Paper

FBIS has traded off continued development of their Modernization
Classified Segment on DEC equipment versus use of SAFE and IBM as
a base. Their decision not to use SAFE has many short-comings.
Since IISG only supported development of the SAFE proposal, we
have minimal information on the rationale for the decision. I
have attempted to consolidate in this memo all of the major
factors that could have influenced this decision. I also tried to
be objective and filter out "invented here" biases in the
analysis.

SAFE is a very sophisticated information storage and retrieval
system that integrates most of the functional needs of an
intelligence analyst into a single environment.

ISSUES:

1. How close does SAFE functions map to the needs of FBIS.

    A study was performed by IISG and TRW that showed the
    following:

        Over 40 per cent of FBIS Requirements are satisfied by
        SAFE Delivery 2

        An additional 45 per cent of the requirements will be
        satisfied by the SAFE Delivery 3 software currently in
        coding

        A very Rough Order of Magnitude estimate of 15,000 lines
        of additional code is needed to satisfy the rest of the
        FBIS requirements.

    FBIS was briefed on the results of the study and had no

disagreement with it. Thus there is a very close mapping between SAFE and FBIS.

2. Is DDI interested in the additional functions required by FBIS

With only one exception, every other FBIS user function has been previously requested by ASG to eventually become part of SAFE. This was confirmed by ASG and potential cost sharing for their development may be available.

3. Costs differences between the approaches.

I have heard only indirectly that the costs associated with use of SAFE and their current development path are very close. To me the trade-off is between SAFE costs being hardware costs and their current development plan being primarily software costs.

FBIS has far more flexibility in handling budget cuts if their costs are hardware oriented. There are many ways of spreading hardware costs over many years or requiring less hardware by coming up with fewer users or smaller data bases. When software costs are forced to be spread out over many years, functions are not delivered.

The SAFE presentation included support personnel and training costs. It is unknown if these were included in the current FBIS contract. These particular costs are significantly reduced using SAFE because of the already developed SAFE Training Courses and documentation (which cost millions of dollars) and the support personnel sharing available between like computer facilities and systems.

There is a long term savings in contractor personnel needed to perform software maintenance. There will be cost sharing between DDI and FBIS on the maintenance personnel needed.

4. Schedule and Delivery of Capabilities

I have no knowledge of what the current FBIS schedule is. SAFE Delivery 3 is scheduled for operations in November 1986. Thus if the hardware were available, 85 per cent of the FBIS Classified Segment requirements could be delivered by the end of this year. Based upon current SAFE contracts, the programming resources needed to develop the additional requirements are freed up from SAFE when they would be needed by FBIS. All requirements would be operational for FBIS by November 1987.

This development is not dependent in most part on FBIS having their own computer center. Since the functions are also desired by DDI, it is realistic to assume that they could be developed on DDI computer resources if FBIS are not available.

Finally the possibility exists that some subset of FBIS users could have access to DDI SAFE and would be able to gain operational experience with the system prior to the FBIS Computer Facility being made available. This is a negotiable item between FBIS and DDI.

5. System development risk assessment

I believe everyone is aware that the risks for software development are always significantly greater than those for hardware installation. Thus the tradeoff here must be between SAFEs ability to deliver and FBIS's contractors ability to develop new software. SAFEs track record has been bad, but it is entering a new stage of its development cycle. Delivery 2 which satisfies 40 percent of the requirements is within days of becoming user operational. It is demonstrable, thus there is no risk. SAFE Delivery 3 is in coding and by mid-summer the functions will be in system test. There is a near term check point to verify the accuracy of the schedule. My personal belief is that SAFE has overcome the problems that caused its major delays and has started to and will continue to accurately meet schedules.

6. Software control and flexibility for future change.

I believe this is the most important item to be resolved to allow OIT to continue to develop software for other Directorates. If FBIS would use SAFE as their basis, what is their ability to quickly effect software changes based upon their users requirements. This is especially true when the same software is being used by the DDI. There are two issues in getting this resolved; defining a viable software management proposal and building FBIS's confidence in OIT to support it. The following are some thoughts that I had on this problem.

A starting point for the discussions is that SAFE is an operational system that intends on having frequent releases to fix software errors and provide new functions demanded by the users. The configuration control procedures SAFE will be using will be as streamlined as those that FBIS would propose, either insuring software changes do not have an adverse affect on the rest of the system. Any recommendations to make SAFEs development process more efficient will be welcome. Thus the major issue must be how do we decide what changes to implement. There are two aspects to this issue; who gets to choose and what if there is a non-negotiable dichotomy of requirements. The first is easy in that it is driven by budget. In our experience with CIA and DIA, given the commonality of requirements, we have seen very few cases where joint agreement can not be reached. But SAFE is being developed in some functional cases to determine the Agency its being run at and execute differently. It is obviously in

everyones best interest to minimize these differences to simplify maintenance.

My final observation on this issue is that the best way to quiet an adversary is make him part of the solution. FBIS has both end users and technical development personnel. One way to let them experience directly SAFEs software development procedures is to have them send senior personnel over and give them major roles in the process (e.g., COTR of some of our major contractors). This frees up OIT personnel to work on other projects and gives FBIS visibility and some management control over this particular issue.

7. Long term advantages to commonality of software in multiple Directorates

The trend for the next few years will be significant cuts in the CIA budget. The common use of the same software basis for DDI and FBIS allows enhancements financed by either organization to be available to the other.

The same software and user interface base facilitates movement of personnel and data between the organizations. Re-assigned analysts would require no new training to use the computer system which is a major tool needed in their daily work. Information files developed on one system would be directly portable to the other system. And in the long term, if security issues can be resolved, access between the systems is a very solvable problem given the common software base.

I have addressed all of the major issues I could think of having to do with the decision to not use SAFE. The only issue above that does not immediately show that SAFE is the best software development approach is the issue on software control. My personal bias may be showing thru on the risk issue. But like other major software systems, our ability to accurately estimate development schedules on an existing software base is much better than in developing the first major Delivery. Although there is as much software being developed for Delivery 3 as there is in Delivery 2, this software is not as complex as Delivery 2.

If there is any additional information I can provide, please let me know.

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FBIS-0025/86
28 January 1986

MEMORANDUM FOR: Director of Information Technology

STAT

FROM:

Director, Foreign Broadcast Information Service

SUBJECT: OIT Support to FBIS with SAFE

REFERENCE: Your Memo, dtd 23 Jan 86, Same Subject

1. I want to thank you and your office for conducting the recent SAFE study for FBIS. In particular, I must commend Mike Whelan and his team from TRW for the thorough job in analyzing SAFE capabilities to meet the Automated FBIS System (AFS) classified segment requirements.

2. After a thorough review of SAFE capabilities and equipment cost and our baseline system design, we have decided to pursue development of the Headquarters Classified Segment (HCS) with Lockheed Electronics Company for the following reasons:

    a. We are currently under contract with Lockheed for the development of AFS. Their design approach, which was competitively selected, leads us to believe they can deliver the specified classified segment.

    b. Lockheed's integrated design incorporates complementary hardware and software with relatively simple segment interfaces.

    c. FBIS will be moving to Reston in December of this year. The existing computer facility in the new building will accommodate the baseline design. To plan for a larger facility that would be required by the SAFE solution will require additional facility funds.

3. The study effort was extremely important to FBIS. In the several days following the TRW briefing, we have conducted extensive review of our priorities and funding. Our decision was not a simple one.

4. In the coming months our offices face several tough technical challenges. We look forward to working closely with OIT as we resolve the issues of interfacing our systems to meet the analytical support needs of our Agency.

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OIT-0050-86

2 3 JAN 1986

MEMORANDUM FOR: Director, Foreign Broadcast Information Service

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FROM: William F. Donnelly
Director of Information Technology

SUBJECT: OIT Support to FBIS with SAFE

1.   The final report from our study effort will be delivered at the end of January. This report will include a narrative description of task performed and the initial findings.

2.   I would like to reinforce our commitment in supporting FBIS through the SAFE solution. We have further identified areas of potential cost reductions that were not identified or discussed in sufficient detail at the 10 January briefing.

POTENTIAL COST REDUCTIONS:

a.   The FY1987 cost of the IBM equipment can be reduced by using an Alternate Payment Plan (APP). This approach does escalate the overall cost by approximately 20% but will significantly reduce the FY1987 expenditure.

b.   Serious reconsideration could be made on alternatives in reducing both the DASD costs and space requirements. As you are aware the SAFE system retains its incoming data for ten years, whereas your requirement is for the retention beyond ninety days only if it has been referenced.

c.   The VM front end machine could be downsized initially to a 3083J processor with the ability to upgrade at a later date.

d.   The cost sharing for the development of your requirements has not been fully explored and a saving of at least half might be realized.

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POTENTIAL RISK REDUCTION:

      a.   Early access to available capabilities could be potentially achieved through negotiations with the DI.

      b.   Development of the FBIS functional requirements could begin earlier through negotiations with the DI.

    3.   I am interested in discussing these and any other concerns you may have as a result of the study. The SAFE system has achieved System IOC and the functionality available in Delivery 2 can be demonstrated.

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William F. Donnelly

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D/OIT:WFDonnelly:yt   (22Jan86)

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FBIS MODERNIZATION
HEADQUARTERS AUTOMATION
CLASSIFIED SYSTEM

* 20 YEAR STORAGE OF FBIS PRODUCTS
* MESSAGE PROFILING
* STORED TEXT INDEXED
* TEXT SEARCH CAPABILITY
* BOOLEAN RETRIEVAL

HEADQUARTERS AUTOMATION
CLASSIFIED SYSTEM

* CONFIGURATION ALTERNATIVES
    * CONTRACT BASELINE
        HARDWARE: DEC
        DBMS   :   BASIS
    * OIT
        HARDWARE: IBM
        DBMS   :   SAFE - INQUIRE

* SUMMARY ASSESSMENT
    * BOTH SYSTEMS MEET REQUIREMENTS
    * COST AND SCHEDULE ABOUT THE SAME, MAYBE!

HEADQUARTERS AUTOMATION

CLASSIFIED SYSTEM

BACKGROUND

JULY 84 - FEB 85   SYSTEM STUDIES - DEC HARDWARE, BASIS DBMS

FEB 85 - JUN 85   PROPOSAL -

        LOCKHEED ELECTRONICS (LEC): DEC/BASIS

        ESL   : IBM/SAFE

JULY 85   SOURCE SELECTION

        WINNER LEC - $20M, CY 86 START

25X1   LOSER ESL

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AUG 85 - DEC 85   FBIS COMMISSIONED OIT STUDY OF SAFE ALTERNATIVE

        60% FBIS REQUIREMENTS DEPEND ON SAFE DELIVERY 3
          (NOV 86)

        COST: HARDWARE - $15M
               SOFTWARE - $ 2M

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HEADQUARTERS AUTOMATION
CLASSIFIED SYSTEM
BACKGROUND

JAN 86   OIT SUGGESTED COST REDUCTIONS NOT CREDIBLE

* HARDWARE ALTERNATE PAYMENT PLAN WILL INCREASE COSTS 20%

* NO SPACE REDUCTION POSSIBLE - 20 YEAR STORAGE REQUIREMENT
  IS REAL

* DOWNSIZING FRONT END MAY COMPROMISE PERFORMANCE

* COST SHARE WITH DI FOR DEVELOPMENT OF NEW CAPABILITY
  TOO VAGUE

* SUCCESSFUL NEGOTIATION WITH DI FOR EARLY DEVELOPMENT OF
  FBIS REQUIREMENTS LOW PROBABILITY

CLASSIFIED SYSTEM ALTERNATIVES
FBIS CONCLUSION

CHANGE TO IBM/SAFE ALTERNATIVE IS REJECTED:

* SAFE DELIVERY 3 NOT DEMONSTRATED

* MUST COMPETE WITH DI FOR CONTRACTOR RESOURCES

* NO SIGNIFICANT COST SAVINGS

* INVALIDATE 2 YEAR ANALYSIS OF BASELINE ARCHITECTURE

* MAJOR RENEGOTIATION OF LEC CONTRACT

* POTENTIAL ESL PROTEST